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# Exploring relationships with grade level, gender and language proficiency in the foreign language learning strategy use of children and early adolescents

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## *Abstract*

Given that most of the existing studies of strategy use in learning EFL concerned adult learners, this study focused on elementary and middle school students. Having tested a significant number of children and early adolescents (N = 1302) from a wide range of school grades (4th to 9th), this study explored the differentiation of learning strategies use and preferences across grade and age (9 to 16 years), gender and perceived proficiency in learning EFL. It has found that, in general, the frequency of use declined as students grow older but their strategy preferences remained the same. Only the use of compensation strategies was reported to increase with proceeding age. Also, no differentiation in frequency of the compensation strategies use was noticed between genders, as was found in the other five strategy categories. Regarding the interaction of age with gender, females consistently outperformed males in the reported strategy use, in all grade levels and categories except for the social. Students' most preferred category of strategies was the metacognitive and least preferred was the memory. Finally, a significant relationship between strategy use and perceived level of English language proficiency was found, with high-level students using strategies more frequently than intermediate and low-level students.

***Keywords:*** learning strategy preferences; EFL; Greek; SILL; perceived English proficiency

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# Exploring relationships with grade level, gender and language proficiency in the foreign language learning strategy use of children and early adolescents

## 1. Introduction

In the literature of learning, education and didactics of the last three decades, a sizeable portion of research has been dedicated in determining the role of learning strategies in first, second and foreign language and the factors that influence their use or effectiveness (Charmot, 2004; Lee, 2010). This research has provided useful insights into the processes engaged in language learning and has contributed positively to learner-focused language instruction (Psaltou-Joycey & Kantaridou, 2009a). In this line of research, foreign language strategies have been extensively studied in learning of various languages, mostly of English, and in different cultures and contexts. Most of the previous studies, however, have focused on adult learners, while fewer have been applied on school-aged children and early adolescents (e.g., Chen, 2009; Hu, Gu, Zhang, & Bai, 2009; Lan & Oxford, 2003; Magogwe & Oliver, 2007; Vrettou, 2011). Given that foreign language learning often starts as soon as the first grades of elementary school and peaks at middle or high school, it is essential to investigate the learning strategies that students use at these school grades. This study contributes to the above research field by exploring the learning strategies that school-aged children and adolescents use in learning English as a foreign language, and how strategy use is related to students' age, gender and perceived proficiency of English language.

## 2. Foreign language learning strategies

Language learning strategies have been defined as specific actions consciously employed by students to enhance their own learning (Griffiths, 2007), facilitate the acquisition, storage, recall, and use of information (Cohen, 1998) and make learning more enjoyable, more self-directed and more transferable to new situations (Oxford, 1990). In the last 30 years of research, a number of language learning strategy classifications have been developed. One of the most prominent is Oxford's (1990) system of six categories of language learning strategies (metacognitive, cognitive, memory, compensation, social, and affective). Relevant research has shown that this classification accounts sufficiently for the variety of strategies reported by language learners (Hsiao & Oxford, 2002; Oxford & Burry-Stock, 1995).

Strategy categorization according to Oxford (1990) includes direct strategies (those used directly in dealing with a new language) and indirect strategies (those used for general management of learning). These two types complement each other as learners need to apply both for effective language learning. Specifically, direct strategies include:

- ***Memory strategies***. This category refers to strategies used for information storage and retrieval and is based on simple principles like laying things out in order, making association, and reviewing. It consists of four strategic groups (creating mental linkages, applying images and sounds, reviewing well and employing action. The use of memory strategies is most frequently applied in the beginning process of language learning.
- ***Cognitive strategies*** which are used for comprehension and production (practicing, receiving and sending messages, analyzing and reasoning, creating structure for input and output). The target language is generally manipulated or transformed by repeating, analyzing or summarizing.
- ***Compensation strategies*** are used to overcome limitations in linguistic knowledge or performance (guessing intelligently and overcoming limitations in speaking and writing).

Direct strategies are beneficial to the students because they help store and recover information. These strategies help learners produce language even when there is gap in knowledge. They also help them understand

and use the new language. Indirect language learning strategies work together with the direct strategies. They help learners regulate the learning process by supporting and managing language learning without direct engagement. They and consist of:

- ***Metacognitive strategies:*** used to plan, organize, focus, and monitor learning (centering learning, arranging and planning learning, evaluating learning),
- ***Affective strategies:*** used to control motivation and emotions (lowering anxiety, encouraging yourself and taking emotional temperature) and
- ***Social strategies:*** used for cooperative interaction with others (asking questions, cooperating with others, empathizing with others) (Ardasheva & Tretter, 2013, p. 475).

Oxford's (1990) classification includes cognitive, emotional, and social aspects of language learning strategies that enhance learners' language learning proficiency and self-confidence. These six broad categories of strategies include nineteen secondary strategies with a further sixty-two specific strategies and lay the fundamentals of the Strategy Inventory for Language Learning (SILL) (Oxford, 1990) which is one of the most widely used strategy questionnaire in the world. Compared with earlier research into language learning strategies, Oxford's (1990) classification of language learning strategies is more comprehensive and detailed (Chamot, 2004; Lee, 2010).

*2.1 Determinants of language learning strategy use*

Extended research on English as a foreign language (EFL) found that learning strategy use and preferences depend on various characteristics of the learners, including their cultural background and nationality (Kamalizad & Samuel, 2014). A review of the ample research findings reveals that different cultural groups use particular strategies at different levels of frequency or preference (see Lee, 2010). Most of the research was carried out in adult samples, more often than not in university students. For example, a number of findings agree that metacognitive and compensation are included in the most frequently used categories of strategies, while memory strategies in the least frequently used by university students of various countries, such as Taiwan (Chen, 2007; Chen & Jonas, 2009; Liu, 2013) and Greece (Psaltou-Joycey & Kantaridou, 2009a). Depending on the country, cognitive strategies have been found to be either among the most (Chen & Jonas, 2009; Sheu, 2009) or among the least preferred category of strategies (Psaltou-Joycey & Kantaridou, 2009a). Finally, social strategies are the least preferred by Chinese and Japanese students (Noguchi, 1991). Overall, university students report medium to low frequent use of learning strategies (Liu, 2013; Chen & Jonas, 2009; Psaltou-Joycey & Kantaridou, 2009a).

Elementary school children tend to report medium or above medium-range use of learning strategies in most relevant studies (e.g., Lan & Oxford, 2003; Vrettou, 2011). Conversely, there is a lack of consensus regarding the learning strategies that school-aged children prefer across different countries and contexts. For example, elementary school children in Taiwan reported they more frequently use the compensation and affective strategies (Lan & Oxford, 2003). Greek-speaking children of 6$^{th}$ grade reported using more frequently the metacognitive and the social strategies and less frequently the memory and the compensation strategies (Vrettou, 2011). Finally, a study with school-aged children in USA that learn English as a second language revealed that their higher preference was for the metacognitive strategies, followed by the cognitive and the social, and their lowest preference was for the affective strategies (Ardasheva & Tretter, 2013). Evidently, no solid conclusions can be drawn regarding strategy use of young learners since it is highly depended on their cultural context. At the same time, no study has included a wide age range of students in order to determine how the use of strategies in learning EFL changes with proceeding age. To compensate this paucity of evidence, the present study comprised students ranging from the 4$^{th}$ to the 9$^{th}$ school grades, i.e., aged from 9 to 16 years.

Gender emerges as another factor influencing strategy use in learning EFL (see Vrettou, 2011). In most studies reporting statistically significant differences, females were found using a wider range of strategies and

more frequently than males both among university students (Green & Oxford, 1995; Kaylani, 1996; Psaltou-Joycey & Kantaridou, 2009a) and younger learners (Lan & Oxford, 2003; Lee, 2003). In her study with 6th grade Greek children, Vrettou (2011) found that females exceeded males in their reported use of cognitive, metacognitive, affective, and social strategies. On the other hand, few studies report no statistically significant differences between male and female adults (Aliakbari & Hayatzadeh, 2008; Gavriilidou & Papanis, 2010; Kojima & Yoshikawa, 2004). In the present study, we looked for any effects of gender on learning strategy use as well as probable interactions with proceeding age.

Research has shown that frequent strategy use is associated with more efficient higher learning in first, second and foreign language (Ardasheva & Tretter, 2013; Lan & Oxford, 2003; Rao, 2012). This is particularly manifested in the ample studies examining the role of language proficiency in strategy use in EFL. Although there is no consensus among various studies regarding the order of strategy preference, they almost unanimously conclude that university students of the high level of language proficiency utilize a larger number of learning strategies, in greater frequency, and in different order of preference than the low level students (Chen, 2007; Lee, 2003; Gavriilidou & Papanis, 2010; Psaltou-Joycey & Kantaridou, 2009a; Sheu, 2009; see Vrettou, 2011 for an extended review). Similar results were found when younger learners were examined (see Lan & Oxford, 2003); for example, Vrettou (2009) reports that, among 15-year old Greek students, beginners in EFL used strategies to a significantly lower degree than the intermediate and the advanced level students.

Interestingly, it appears that not only the actual but also the perceived level of language proficiency has the same association with strategy use, since actual and perceived rating of language proficiency is found to be closely related. For example, Wong and Nunan (2011) found that both high and low proficient learners give accurate self-ratings of their actual language ability. Likewise, findings from the EFL field indicate that perceived language proficiency and strategy use are closely related. Oxford and Nyikos (1989) explored the relationship between language learners' proficiency and their use of learning strategies; they found that learners' self-rating levels of language proficiency were closely linked to their use of strategies. Liu (2013) reports that university students who perceived themselves as more proficient in English tend to apply learning strategies more frequently during the language acquisition process. In conclusion, Lee and Oxford (2008) claim that self-rated proficiency is one of the strongest predictors of strategy use in EFL.

## 3. Aims and hypotheses of the study

As reported earlier, most of the existing studies of strategy use in learning EFL focused on adult learners, while few comprised school-aged children and adolescents (e.g., Lan & Oxford, 2003; Vrettou, 2011). Given that younger individuals differ in many aspects of learning and cognitive function compared to adults, it is crucial to study (a) their frequency of use and preferred learning strategies and (b) factors that may associate with them, such as grade level, gender, and English language learning proficiency. As a result, it is hoped that this evidence will inform teachers about the role of the (more obvious) individual characteristics of their students in learning strategy use and, thus, assist teachers in adjusting their teaching methods, strategies and materials to cater more efficiently for the learning needs of their students.

More specifically, the present study aimed, first, at investigating the frequency of use and preferences of the learning strategies that Greek elementary and middle school students use as they learn EFL. Based on previous research, it is expected that Greek young students would opt for the metacognitive and the social strategies (Vrettou, 2011).

Second, the study aimed at testing how perceived use of learning strategies of children and adolescents change with proceeding age. Given that younger individuals usually overestimate their performance and skills (Chen, 2009; Vrettou, 2011), it was expected that students of lower school grades would report more frequent use of all learning strategies compared to older students. Also, in line with prior research findings, we expected that girls' self-reports of strategy use would outperform boys'. Yet, what was more important to explore (which

has not been studied so far) is the interaction between school-grade and gender; in other words, to determine if any gender differences in strategy use identified in the whole sample remain across grade levels.

Finally, we aimed at exploring the relations between learning strategy use and perceived level of English language proficiency. Also, we sought at determining if the use of each category of learning strategies varies among students of low, intermediate and high perceived level of English language proficiency. Prior research has emphasized the significant role of high language proficiency in learning strategy use; therefore it was expected that significant differences would emerge among the three language proficiency levels.

## 4. Method

### *4.1 Participants*

Data were collected from 1302 primary and secondary school students of public schools in the regions of Northern Greece. Out of them, 604 were students of the 4th, 5th and 6th grades of elementary school and 697 were students of the 7th, 8th and 9th grades of middle school. Table 1 presents the sample distribution according to their grade. In the whole sample, there were 615 males (47.3%) and 677 females (52%); in each grade the two genders were almost equally represented. The age range of the sample was 9 to 16 years, with a mean of 12.42 (SD = 1.77). Finally, few students did not report either their grade, gender or age; these cases are treated as missing variables.

**Table 1**

*Description of participants in relation to their school grade and gender*

| Grade | Males | Females | Total |
|---|---|---|---|
| 1 | 82 | 96 | 178 |
| 2 | 111 | 112 | 223 |
| 3 | 101 | 99 | 200 |
| 4 | 106 | 120 | 226 |
| 5 | 120 | 114 | 234 |
| 6 | 95 | 136 | 231 |
| | 615 | 677 | |

### *4.2 Research Instruments*

The Strategy Inventory for Language Learning (SILL) (Oxford, 1990) was administered to the participants. This is a widely used instrument for the measurement of strategy use, mostly of adult populations, and has been administered in numerous languages and cultures around the globe (Lee, 2010; Oxford & Burry-Stock, 1995). To become suitable for younger learners, certain adaptations were necessary. First, a simplified translation of the SILL had to be prepared to ensure that all items would be understood by students of all school grades (Gavriilidou & Mitits, in press). Second, two items (4 and 43) of the original SILL were not included (based on Vrettou, 2011), because the strategies they map could not be used or applied by Greek young learners. So, in the present study, the SILL comprised 48 items grouped into six categories of learning strategies, which (as Cronbach α indicate) presented an adequate or satisfactory internal consistency: memory strategies (8 items, α = .65), cognitive strategies (14 items, α = .77), compensation strategies (6 items, α = .57), metacognitive strategies (9 items, α = .84) affective strategies (5 items, α = .64), and social strategies (6 items, α = .72). Respondents had to answer using a five-point Likert scale ranging from 1 (*never or almost never true of me*) to 5 (*always or almost always true of me*). Compound variables were computed for each of the six categories to indicate how frequently participants use each of the learning strategies

Perceived level of English language proficiency was determined by a question in which students were asked to rate their level of English in comparison to their classmates using a 5-point Likert scale ranging from 1 (*low*)

to 5 (*very good*).

## 5. Results

Table 2 presents the means of the six categories of foreign language learning strategies tested by the SILL, both of the total sample and of specific grade levels. First, regarding total scores, it is evident that all strategies are moderately used by the students, according to their self-reports. Looking for their language learning strategy preferences, it is noticed that most preferred category of strategies is the metacognitive closely followed by the affective. Then, in descending order, students marked their preference for the cognitive and the social strategies. Finally, the compensation and the memory strategies are the least preferred.

**Table 2**

*Means and statistical indices of the learning strategy use across school grades*

| Strategies | Grades | | | | | | total sample | F | df | Partial $\eta^2$ |
|---|---|---|---|---|---|---|---|---|---|---|
| | 4th | 5th | 6th | 7th | 8th | 9th | | | | |
| memory | 2.88 | 2.83 | 2.63 | 2.59 | 2.48 | 2.49 | 2.64 | 16.10 | 5,1295 | .06 |
| cognitive | 3.11 | 3.16 | 3.09 | 3.00 | 2.88 | 2.93 | 3.02 | 6.39 | 5,1295 | .03 |
| compensation | 2.50 | 2.49 | 2.58 | 2.69 | 2.70 | 2.93 | 2.66 | 10.41 | 5,1295 | .04 |
| metacognitive | 3.66 | 3.67 | 3.50 | 3.34 | 3.20 | 3.23 | 3.42 | 14.72 | 5,1295 | .06 |
| affective | 3.35 | 3.50 | 3.41 | 3.23 | 3.14 | 3.34 | 3.32 | 5.16 | 5,1295 | .02 |
| social | 3.12 | 3.25 | 3.02 | 2.93 | 2.79 | 3.01 | 3.02 | 8.25 | 5,1295 | .03 |

*Note*. $p < .05$

To investigate any individual differences in relation to students' grade and gender, a series of ANOVAs was run in which the dependent variables were the six strategy categories and the independent were the grade levels and gender, respectively. As the first ANOVA revealed (see Table 2), all grade differences were significant indicating that the students of lower grades tend to report more frequent use of all strategies than the students of higher grades, with one exception to be discussed later. Specifically, post hoc analysis using the Scheffe criterion showed that, in most strategies, significant differences are found between the lower and the higher school grades, and certainly not between the first two (4th and 5th) or the last two grades (8th and 9th). In other words, as students grow and mature, the frequency of use of language learning strategies they report becomes more modest (see Figure 1) and probably closer to their actual strategy use. The only exception to the above concerns the category of compensation strategies, in which grade differences were also significant, but the students of the highest grade reported more frequent strategy use than the students of all other grades.

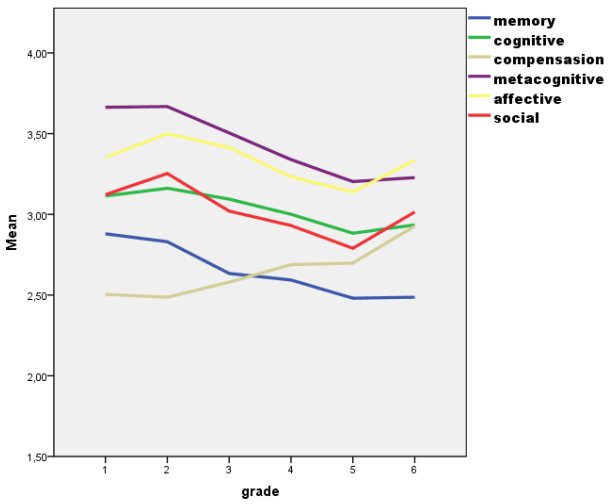


*Figure 1*. Change of strategy use across school grades

In relation to gender, ANOVA revealed that, in all learning strategies except for the compensation, female students reported significantly higher strategy use than male students (see Figure 2) [memory $F(1,1291) = 9.28$, *partial* $\eta^2 = .01$, cognitive $F(1,1291) = 30.82$, *partial* $\eta^2 = .02$, metacognitive $F(1,1291) = 63.32$, *partial* $\eta^2 = .05$, affective $F(1,1291) = 51.71$, *partial* $\eta^2 = .04$, and social $F(1,1291) = 52.99$, *partial* $\eta^2 = .04$, $p = .000$ in all cases]. In the compensation strategies, no significant effect of gender was found. Furthermore, it must be noted that the interaction of grade and gender that was tested with a series of MANOVAs was significant only in the social learning strategies [$F(5,1280) = 2,92$, $p = .01$, *partial* $\eta^2 = .01$]. This indicates that females consistently reported more frequent use of all learning strategies across all school grades, but the social strategies. In this category of strategies, girls and boys of the 4th grade reported equally frequent use while their reports started differentiating after the 5th grade, with girls reporting more frequent use.

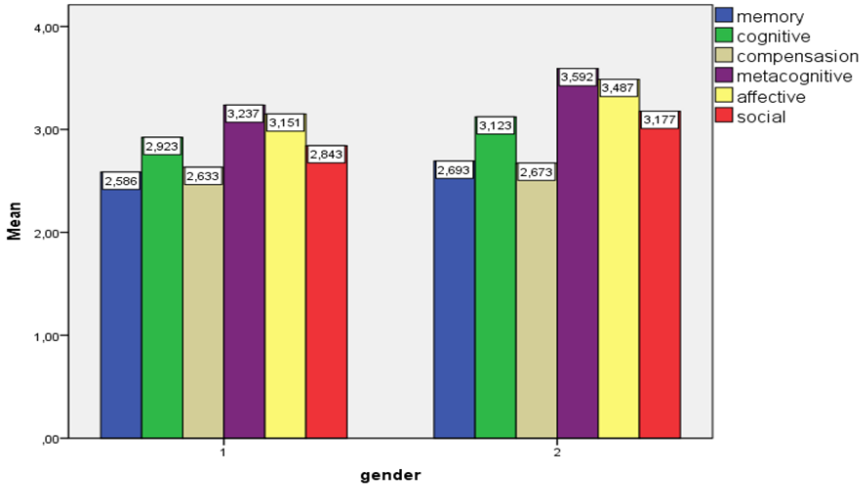


*Figure 2*. Means of strategy use of male and female participants

Students' self-ratings show that their perceived level of English language proficiency was almost good (M = 3.93, SD = 1.02), with the highest school graders reporting significantly lower scores than the lowest graders [$F(5, 1281) = 2.43$, $p = .03$]. By computing the mean minus or plus a standard deviation, students were divided into three groups of perceived level of English language proficiency: the low group (those having scores lower than one standard deviation of the mean) comprised 146 (11.2%) students, the intermediate group 717 (55.1%) students and the high group 426 (32.7%) students (those having scores higher than one standard deviation to the mean). Subsequently, the three groups were compared in their use of learning strategies using a series of ANOVAs. Results showed (see Table 3) that the students of the high group reported higher use of all learning strategies compared to the students of the intermediate and the low group. In turn, the students of the intermediate group reported higher strategy use than the students of the low group. In relation to language learning strategy preferences, it is interesting to note that students' strategy preferences were identical for the high and the intermediate group, and quite similar for the low group.

**Table 3**

*Means of strategy use in relation to level of perceived English language proficiency*

| Strategies | Low | Intermediate | High | F | df | Partial $\eta^2$ |
|---|---|---|---|---|---|---|
| memory | 2.25 | 2.62 | 2.81 | 48.21 | 2,1286 | .07 |
| cognitive | 2.54 | 3.00 | 3.24 | 71.53 | 2,1288 | .10 |
| compensation | 2.55 | 2.60 | 2.78 | 8.61 | 2,1286 | .01 |
| metacognitive | 2.73 | 3.40 | 3.71 | 88.66 | 2,1286 | .12 |
| affective | 2.92 | 3.32 | 3.46 | 22.73 | 2,1288 | .03 |
| social | 2.55 | 3.00 | 3.21 | 34.90 | 2,1286 | .06 |

*Note*. $p < .001$

Finally, to explore the relationships of learning strategies with age and perceived English language proficiency, the correlation matrix was obtained. As Table 4 shows, all correlations were significant, indicating that younger students and students of higher language proficiency reported more frequent strategy use. It is worthy to note that correlations between learning strategies and perceived language proficiency remained significant even after controlling for age; this strengthens the evidence that students of high language proficiency are more frequent users of language strategies.

**Table 4**

*Correlation and partial correlation (controlling for age) of language strategy use and perceived English language proficiency*

| Strategies | Correlation with perceived English language proficiency | Partial correlation (controlling for age) |
|---|---|---|
| memory | .273 | .251 |
| cognitive | .349 | .334 |
| compensation | .110 | .129 |
| metacognitive | .362 | .342 |
| affective | .181 | .168 |
| social | .236 | .221 |

*Note.* $p < .000$

## 6. Discussion

In this study, we explored the strategies used by school-aged children and adolescents in learning EFL. We found that our Greek elementary and middle school participants (aged 9 to 16) reported moderate use of learning strategies, a result which is common in most previous studies among young individuals (Lan & Oxford, 2003; Vrettou, 2011). In the following sections, we will discuss in detail our findings on students' strategy preferences, as well as on how strategy use varies across school grades, gender, and levels of perceived English language proficiency.

### *6.1 Learning strategy preferences*

Findings revealed that Greek students preferred using mostly the metacognitive and the affective strategies and least the compensation and the memory strategies. This evidence is partly in agreement with a previous study with Greek children of 6th grade (Vrettou, 2011), but varies in relation to findings from other cultures both of Western and of Asian countries (e.g., Ardasheva & Tretter, 2013; Chen, 2009; Lan & Oxford, 2003), suggesting that culture is a strong determinant of language learning strategy use. Besides, the current results obtained by school-aged children and early adolescents differentiate from those obtained by college students (Chen, 2007; Chen & Jonas, 2009; Liu, 2013; Psaltou-Joycey & Kantaridou, 2009a). This may have a dual interpretation. First, that language learning preferences vary across cultures and ages and no undisputed or meaningful conclusions can be drawn across time, even for the same culture; it seems that strategy preferences are highly dependent on the learning context, the teaching methods and the personal characteristics and resources of the learners. Second, in many studies, metacognitive strategies are included among the most preferred ones across many cultures and ages. Despite the fact that metacognition is largely under development in the elementary school years, it seems that it functions as an umbrella-ability that facilitates, or even enables, all other categories of strategies to be acknowledged, operated and consciously applied (Demetriou, Christou, Spanoudis, & Platsidou, 2002). The high preference that metacognitive strategies exhibit in most learning contexts and age groups provides evidence to the latter interpretation (Lee, 2010; Tsan, 2008).

### *6.2 Grade levels and age*

So far, age differences in learning strategies use have not been comprehensively studied in such a wide age range as in the present study. In general, existing findings showed that elementary school students, as a group,

reported more frequent use of learning strategies compared to high school students (e.g., Psaltou-Joycey & Sougari, 2010). As expected, in our study, the reported frequency of use of learning strategies was found to change inversely with proceeding age in all categories except for the compensation strategies. It is interesting to note, though, that strategy preferences remained the same in all age groups. It is commonly known that younger students usually provide inflated, and at times unreal, reports of various dimensions of their own performance, abilities, personality traits, etc. As they get older and more cognitively mature, their metacognitive abilities are refined and they become more experienced in rating and ranking themselves vis-a-vis their peers (Flavell, 1979). As a result, self-scores of strategy use steadily decrease from the 4th till the 9th school grade, as students grow older. Furthermore, the significant (and negative) relationship of learning strategy frequency of use with proceeding age was ascertained by the correlation matrix; in particular, the use of the memory and the metacognitive strategies were found to decrease more as learners get older. The decline of the reported frequency of strategy use noticed in the current study probably continues till early adulthood, as testified by the moderate to low strategy use reported by university students (Liu, 2013; Chen & Jonas, 2009; Psaltou-Joycey & Kantaridou, 2009a). Although studies concerning older adults are scarce, no further decline in the frequency of strategy use seems to occur in the after-college years (Kazamia, 2010; Psaltou-Joycey & Kantaridou, 2009b).

In addition to the explanation provided above, the fact that younger students report higher frequency of strategy use may reflect the emphasis, and at times the focus, that teachers and tutors give on language strategies as they instruct their students to apply them in EFL learning. This instruction is more intense in the earlier school grades and expands not only to the foreign but also to the first or second language acquisition. As students become more experienced in the mechanisms and techniques that underlie or facilitate language learning, they integrate the use of learning strategies. In addition, the more children learn about general strategies for learning in specific contexts, the better they become at using them across domains. Yet, for some people and/or at certain levels of language learning, this may be a non-conscious process. As a result, a decline is noted in students' awareness of using them, as they grow older and become more experienced learners. For example, memory strategies may be among the first used in EFL instruction at the early stages of learning, e.g., in learning a new vocabulary. Nevertheless, they are soon integrated into the learning process and, as the amount of information to be grasped and processed grows, the use of memory strategies either becomes non-conscious or is abandoned as not suitable to serve the learning demands in the best way. Consequently, in the current study as well as in others (Chen, 2007; Liu, 2013; Psaltou-Joycey & Kantaridou, 2009b; Vrettou, 2011), the total sample of students reported they do not use memory strategies quite often and their use declines as the school grades advance.

Compensation strategies, on the other hand, do not fit into the same pattern of change as did the other five categories. In this category of strategies, the lowest frequency of use was reported (less than moderate) compared to the other strategies, especially by the elementary school students. Consistent results were found in other studies of Western countries (e.g., Vrettou, 2011), whereas studies of Asian countries show that EFL high-school students use compensation strategies most frequently (Chen, 2009; Magno, 2010). In the current study, it seems that guessing is not a preferred or even likable strategy in language learning, as it raises an uncomfortable feeling of uncertainty in the students. This however changes with proceeding age; the correlation of compensation strategy use with age was found significant but positive, demonstrating that, in contrast to the other strategies, the frequency of use of compensation strategies increased as students grew older, and especially in the middle school years. This indicates that learners become progressively more familiar with encountering and coping with uncertainty and more capable of using compensation strategies to overcome it (Al-Natour, 2012; Psaltou-Joycey & Kantaridou, 2009a; Yilamz, 2010).

### *6.3 Gender*

Consistent to most of the existing findings referred to adults (e.g., Klamkhien, 2010; Liyanage & Bartlett, 2012; Yilmaz, 2010), we found that female young students reported higher strategy use than males, in all but the compensation strategies. It is common evidence that girls outperform boys in self-reported scores of various abilities, skills and personal characteristics. However, it still remains to be specified whether this is attributed to

their more developed metacognitive ability or actual abilities, compared to males. In addition, social and affective strategy use differed most than the others in favor of the females, underlying the idiosyncratic way that females approach life, relations and learning, i.e., with emphasis in the emotional and interpersonal domain (Platsidou, 2005). In the case of compensation strategies, however, even the younger female students were reluctant to rate themselves high because, actually, the use of this category of strategies is not frequently instructed or encouraged, especially at the elementary school grades.

### *6.4 Perceived English language proficiency*

Finally, learning strategy frequency of use was found to relate positively to students' perceived language proficiency, even after controlling for age. This means that higher perceived language proficiency relates significantly to higher learning strategy use by learners, regardless of their age. Specifically, although correlation indices were moderate to low, all learning strategies correlated significantly with language proficiency, with the highest indices being noted between the metacognitive and the cognitive strategies, respectively, and the perceived language proficiency scores. The later reinforces existing findings which showed that only the cognitive strategies showed significant correlations with students' language competence (Ehrman & Oxfrod, 1995), while others suggested that learners who make better use of their metacognitive strategies are those demonstrating higher competence in EFL (Nunan, 1991). In conclusion, it seems that the appropriate use of metacognitive and cognitive strategies relates more significantly with higher perceived language proficiency compared to the other learning strategies. Interestingly, there is evidence that frequent use of the memory strategies may even impede performance in EFL learning domains such as vocabulary and grammar (Oxford, 2003). This claim, however, is not supported by the present findings.

When three groups of students were formed based on their perceived language proficiency score, it was found that they were clearly (and statistically significantly) differentiated in their frequency of strategy use, with the students of high perceived language proficiency reporting more frequent use of strategies than the students of modest language proficiency and the latter reporting more frequent use of strategies than those of low language proficiency. This finding strengthens the evidence found in previous studies verifying that, similar to the adult learners', school-aged children and adolescents' self-ratings of language proficiency are closely linked to their use of strategies (Gavriilidou & Papanis, 2010; Gharbavi & Mousavi, 2012; Khamkhien, 2010; Lee, 2010; Lee & Oxford, 2008; Liu, 2013; Oxford & Nyikos, 1989; Vrettou, 2011). On the other hand, fewer studies reported no significant differences between strategy use and proficiency level in learning EFL (Brown, Robson, & Rosenkjar, 2001; Oxford, Park-Oh, Ito, & Sumrall, 1993; Psaltou-Joycey, 2008).

Regarding the implied direction of their relationship, there is evidence showing that the use of learning strategies may predict foreign language performance (e.g., Magno, 2010; Lee, 2010; Rao, 2012), while others argue that the level of language proficiency determines the frequency or the choice of using specific learning strategies (e.g., Gavriilidou & Psaltou-Joycey, 2010). Finally, others (MacIntyre & Gardner, 1994) describe their relationship as circular, whereas the two variables can be both cause and result of one another in the language process. Unfortunately, in the present study, the lack of measurement of students' actual language proficiency and its correlational nature hampers our ability to determine whether competence in EFL is the cause or the result of the appropriate strategy use.

## 7. Conclusions and pedagogical implications

Summing up, having tested a significant number of students (N = 1302) from a wide range of school grades (4th to 9th), this study explored the differentiation of learning strategy use and preferences across grade and age, gender and perceived competence in learning EFL. It has found that, in general, the frequency of use declined as students grow older but their strategy preferences remained the same. Only the use of compensation strategies was reported to increase with proceeding age. Also, no differentiation in frequency of the compensation strategies use was noticed between genders, as was found in the other five strategy categories. Regarding the

interaction of age with gender, females consistently outperformed males in the reported strategy use, in all grade levels and categories except for the social. Students' most preferred category of strategies was the metacognitive and least preferred was the memory. Finally, a significant relationship between strategy use and perceived level of English language proficiency was found, with high-level students using strategies more frequently than intermediate and low-level students.

Overseeing the frequency of use and preferences of learning strategies, it seems that the learners' metacognitive skills and strategies, that facilitate them understand their own thinking and learning processes and control their cognition, are prominent factors in learning EFL. In the language classroom it is important that "*teachers strive to develop students' own metacognition, as that will help them select the most appropriate strategies for a given task. Students do not need to learn the names of every strategy that has been identified in the research literature! They need to learn how to use strategies that they find effective for the kinds of tasks they need to accomplish in the L2*" (Chamot, 2004, p. 18). Research has shown that language learning strategies can be taught through strategy training, and it most cases such training entails applying and developing learners' metacognition. Students can benefit from this kind of instruction if they can understand the strategy itself, perceive it to be effective and do not consider its implementation to be too difficult (MacIntyre & Noels, 1996).

More proficient language learners were found to have better understanding of the task requirements and, thus, chose the most appropriate language learning strategy to meet those requirements. Although there are notable differences in frequency of use and preference of learning strategies among learners of different language proficiency levels, all learners can profit from learning how to use metacognitive strategies to support their learning efforts (Chamot, 2004). Actually, recent findings suggest that less-skilled learners benefit more from metacognitive instruction to develop listening comprehension (Bozorgian, 2014).

Younger students were found to be reluctant in using compensation strategies in learning EFL. These strategies are considered to facilitate learning by enabling students find alternative means to overcome gaps in linguistic knowledge and, thus, keep practicing the language (Oxford, 1990). Research has shown that students can be instructed and encouraged in using compensation strategies in the classroom or in their private studying, such as miming games, definition activities (e.g., crossroad puzzles), seek help, switch to first language, circumlocutions, coining words, gesturing etc. (Margolis, 2001). Furthermore, teachers may well be actively engaged in identifying potential new strategies to instruct their students explore and utilize, even in the early stages of the L2 learning.

Evidently, strategy-based instruction is more effective when it is integrated as a part of the regular classroom curriculum (Chamot, 2005). In order for teachers to fulfill their part in this endeavor, they should be informed of the parameters that determine, facilitate or associate with the proficient language learning strategy use by their students, such as those explored in the present study.

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